

# **RETAINING AND FIXING STRUCTURE OF RAISED FLOOR**

## **HOLDER**

### **FIELD OF THE INVENTION**

The present invention relates to a retaining and fixing structure of raised  
5 floor holder and, more particularly, to a retaining and fixing structure having  
higher strength and better vibration-proof capability.

### **BACKGROUND OF THE INVENTION**

Prior art raised floors are mounted on intertwining girders with a holder  
disposed at each intersection point of the girders. Through the function of the  
10 holders, the girders and the raised floors can be supported and positioned at a  
predetermined height. As shown in Fig. 1, a prior art raised floor holder has a  
tubular holder body 10a. A pipe cover 11a is fixedly disposed at the top of the  
holder body 10a. The pipe cover 11a has an assembly hole 12a thereon. A top  
plate 13a is disposed above the holder body 10a. The bottom of the top plate  
15 13a has a rod body 14a, which is assembled into the assembly hole 12a of the  
pipe cover 11a by screwing or tight matching so that the top plate 13a can  
support devices such as girders or raised floors (not shown). Because the height  
of the assembly hole 12a of the pipe cover 11a is much limited, it is hard to  
steadily match the rod body 14a of the top plate 13a into the assembly hole 12a.  
20 Therefore, the top plate 13a and the rod body 14a will easily jolt to generate  
displacement due to factors such as vibration. The vibration-proof capability  
thereof is thus inferior.

Accordingly, another prior art raised floor holder has been proposed. The  
holder has a tubular holder body 20a. A pipe cover 21a is fixedly disposed at  
25 the top of the holder body 20a by tight matching. The pipe cover 21a has an

assembly hole 22a thereon. A fixing sleeve 23a is fixed in the assembly hole 22a by soldering. A rod body 25a of a top plate 24a is assembled into the fixing sleeve 23a by tight matching. The rod body 25a of the top plate 24a can also be assembled into the fixing sleeve 23a by screwing. The fixing sleeve 23a can support and fix the rod body 25a of the top plate 24a. Because the fixing sleeve 23a has a larger height, it has a larger contact area between the inner wall thereof and the rod body 25a to enhance degree of tightness, thereby preventing the top plate 24a and the rod body 25a from generating jolt and displacement. The holder body 20a and the top plate 24a can thus be firmly joined to enhance vibration-proof capability of raised floors.

However, for the above two raised floor holders, when the pipe cover 11a (21a) is assembled at the top of the holder body 10a (20a), unsettlement easily arises due to inexact fixing operation of tight matching or soldering. The pipe cover 11a (21a) will generate axial displacement along the holder body 10a (20a). The pipe cover 11a (21a) and the holder body 10a (20a) will thus easily unsettle or separate from each other, resulting in damage of the holder. In other words, the vibration-proof capability thereof is inferior.

Accordingly, the above raised floor holders have inconvenience and drawbacks in practical use. The present invention aims to resolve the problems in the prior art.

## SUMMARY OF THE INVENTION

The primary object of the present invention is to provide a retaining and fixing structure of raised floor holder, whereby when a pipe cover is firmly assembled at the top of a holder body, the pipe cover will not generate axial displacement along the holder body. That is, the pipe cover and the holder body

will not unsettle or separate from each other, hence providing better vibration-proof capability.

Another object of the present invention is to provide a retaining and fixing structure of raised floor holder, wherein a pipe cover thereof has a larger height, and a larger contact area is obtained between the pipe cover and a rod body to enhance degree of tightness, thereby preventing a top plate and the rod body from generating jolt and displacement. The holder body and the top plate can thus be firmly joined. Moreover, the pipe cover is a rigid block having higher strength to enhance vibration-proof capability of raised floor.

To achieve the above objects, the present invention provides a retaining and fixing structure of raised floor holder. The retaining and fixing structure comprises a holder body, a pipe cover, and a fixing stud. The holder body has a screw hole thereon. The pipe cover is disposed at the top of the holder body. A retaining groove is annularly disposed on the pipe cover. The fixing stud is screwed into the screw hole of the holder body. The front end of the fixing stud is matched into the retaining groove of the pipe cover. A retaining and fixing structure of raised floor holder is thus formed.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawings, in which:

#### **BRIEF DESCRIPTION OF THE DRAWINGS:**

Fig. 1 is a cross-sectional view of a prior art raised floor holder;

Fig. 2 is a cross-sectional view of another prior art raised floor holder;

Fig. 3 is a perspective view of the present invention;

Fig. 4 is an exploded perspective view of the present invention;

Fig. 5 is a cross-sectional view of the present invention; and

Fig. 6 is a cross-sectional view according to another embodiment of the present invention.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

As shown in Figs. 3, 4, and 5, the present invention provides a retaining and fixing structure of raised floor holder comprising a holder body 10, a top plate 11, a pipe cover 13, and a fixing stud 20. The holder body 10 is a hollow circular pipe. A pipe cover 13 having a larger height is disposed at the top of the holder body 10. The pipe cover 13 has a large-diameter portion 14 and a small-diameter portion 15. The large-diameter portion 14 is a hollow hexangular pole, and the small-diameter portion 15 is a hollow circular pole. The small-diameter portion 15 is situated below the large-diameter portion 14. A retaining groove 18 is annularly disposed on the small-diameter portion 15 of the pipe cover 13. The holder body 10 has a corresponding screw hole 19 thereon. The fixing stud 20 is screwed into the screw hole 19. The small-diameter portion 15 of the pipe cover 13 is matched inside the top of the holder body 10 so that the pipe cover 13 can be joined at the top of the holder body 10. The fixing stud 20 is screwed tightly to let the front end thereof be matched into the retaining groove 18 of the pipe cover 13. Of course, the pipe cover 13 can be further fixedly disposed at the top of the holder body 10 by soldering or tight matching. At least a screw nut 21 can be screwed to the fixing stud 20 so that the fixing stud 20 can be firmly locked on the holder body 10. The pipe cover 13 has an assembly hole 16 thereon. The assembly hole 16 is a screw hole.

The top plate 11 is disposed above the holder body 10. A vertically

extending rod body 12 is fixedly disposed at the bottom of the top plate 11. The rod body 12 is a screw rod. The rod body 12 is matched into the assembly hole 16 by screwing. At least a screw nut 17 is screwed to the rod body (screw rod) 12 so that the rod body 12 can be fixedly locked on the holder body 10. A retaining and fixing structure of raised floor holder of the present invention is thus formed.

The present invention utilizes the pipe cover 13 to support and fix the rod body 12 of the top plate 11. Because the pipe cover 13 has a larger height, a larger contact area can be obtained between the inner wall thereof and the rod body 12 to enhance degree of tightness, thereby preventing the top plate 11 and the rod body 12 from generating jolt and displacement. Therefore, the holder body 10 and the top plate 11 can be firmly joined. Moreover, the pipe cover is a rigid block having higher strength, hence enhancing vibration-proof capability of raised floor.

In the present invention, the fixing stud 20 screwed onto the holder body 10 is matched into the retaining groove 18 of the pipe cover 13 so that the pipe cover 13 can be retained and fixed on the holder body 10 through the fixing stud 20. Therefore, when the pipe cover 13 is assembled at the top of the holder body 10, the pipe cover 13 will not generate axial displacement along the holder body 10. In other words, the pipe cover 13 and the holder body 10 will not unsettle or separate from each other, hence achieving higher strength and better vibration-proof capability.

Additionally, as shown in Fig. 6, the shape of the retaining groove 18 of the present invention can vary. Moreover, the fixing stud can join a larger turn button so that a user can directly turn it with hands conveniently.

To sum up, the present invention can let a pipe cover be retained and fixed on a holder body so that the pipe cover and the holder body will not unsettle or separate from each other.

Although the present invention has been described with reference to the preferred embodiments thereof, it will be understood that the invention is not limited to the details thereof. Various substitutions and modifications have been suggested in the foregoing description, and others will occur to those of ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the appended claims.

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